



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/666,300	09/21/2000	Raymond Freymann	951/48943	8406

7590

07/24/2003

Crowell & Moring LLP  
Intellectual Property Group  
P O Box 14300  
Washington, DC 20044-4300

EXAMINER

MICHALSKI, JUSTIN I

ART UNIT	PAPER NUMBER
----------	--------------

2644

DATE MAILED: 07/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/666,300

Applicant(s)

FREYMAN ET AL.

Examiner

Justin Michalski

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 09/21/2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 6 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear as to what a "push operation" is as stated in Claim 6 and the specification. There is also no reference to Figure for determination unit having an input for receiving an input variable based detection of a push operation. Art rejection is not made at this time due to 112 statement above.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 4, 5, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Miller (US Patent 5,237,617).

Regarding Claim 1, Miller claims a device (Fig. 1) for electroacoustic sound generation in a motor vehicle, said device comprising: a sound pressure sensor (vacuum 23, exhaust 24, Miller discloses each detector is designed to produce an

output indicative of the operating state of the vehicle component to which it is connected. i.e. sound pressure sensor) (Column 3, lines 25-28) positioned proximal to or within one of an intake tract and an exhaust tract of the motor vehicle (vacuum 23 connected to a vacuum line, exhaust 24 connected to exhaust system)(Column 3, lines 37-40); a signal processing unit (references 11,12, 32, 37, 38, 42, and 43) connected to and receives an output of said sound pressure sensor (references 26 and 27); a loudspeaker unit (speaker 53) having at least one loud speaker wherein said loudspeaker unit is connected to said signal processing unit (leads 49 and 51); a synthesizer (synthesizer 32) connected with or integral with said signal processing unit whereby synthetic sound components are added to said signal generated from said sound pressure sensor (Miller discloses the invention is for simulating the sounds of different types of engines. i.e. synthetic) (Column 2, lines 5-10).

Regarding Claim 4, Miller discloses a synthesizer (synthesizer 32) that includes at least an input for input signals indicating at least one of throttle position (reference 16), accelerator pedal position, and input parameters of corresponding signals (reference 21) and wherein at least one of the amplitude and sound characteristics of signals generated by the synthesizer are variable as a function of said input signals (Miller discloses the analyzer interprets inputs from the sensors (i.e. function of inputs) and generates controlling signals for a synthesis subsystem) (Column 2, lines 19-21).

Regarding Claim 5, Miller discloses a device as in Claim 1 wherein said synthesizer (Fig. 1, reference 32) is connected to receive a signal (reference 28) as a function of the detected sound pressure amplitude and wherein at least one of the

amplitude and sound characteristics of the signal output by said synthesizer is varied as a function of said input signal (Miller discloses signal is produced and indicative of engine operating conditions including pressure amplitude of sensors 23 and 24) (Column 3, lines 56-62).

Regarding Claim 9, Miller claims an electroacoustic sound generator for a motor vehicle (Fig. 1) comprising: a sound pressure sensor (vacuum 23, exhaust 24, Miller discloses each detector is designed to produce an output indicative of the operating state of the vehicle component to which it is connected. i.e. sound pressure sensor) (Column 3, lines 25-28) positioned in the vicinity of or within the intake tract or the exhaust tract of the motor vehicle (vacuum 23 connected to a vacuum line, exhaust 24 connected to exhaust system)(Column 3, lines 37-40); a signal processing unit (references 11,12, 32, 37, 38, 42, and 43) having a first input for receiving an output of said sound pressure sensor (references 26 and 27) and a second input for receiving a rotational speed signal (reference 17) from said motor vehicle, said signal processing unit comprising a synthesizer (synthesizer 32) for generating synthetic sound components (Miller discloses the invention is for simulating the sounds of different types of engines. i.e. synthetic) (Column 2, lines 5-10) which are added to the signals generated from said sound pressure sensor; and a loudspeaker system (references 48, 51, and 53) connected with an output (reference 46) of said signal processing unit.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hennl (PCT Patent WO 91/18385) in view of Tanaka et al. (US Patent 5,692,052).

Regarding Claim 1, Hennl discloses a device (reference 1) for electroacoustic sound generation in a motor vehicle, said device comprising: a sensor (load 3); a signal processing unit (references 7, 8, and 9) connected to and receives an output of said sound pressure sensor; a loudspeaker unit (reference 11) having a least one loud speaker wherein said loudspeaker unit is connected to said signal processing unit (reference 7); a synthesizer (reference 9) connected with or integral with said signal processing unit whereby synthetic sound components are added to said signal generated from said sound pressure sensor (Hennl discloses references 7 and 8 cause the synthesizer to generate sounds, dependently upon operating ranges covering at least the load signal generated by the load sensor 3). Hennl does not disclose the sensor being a pressure sensor or being positioned proximal to or within one of an intake tract and an exhaust tract of the motor vehicle. Tanaka et al. teaches the use of a pressure sensor to detect air intake disposed in an intake path of an engine (Claim 3). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to place a pressure sensor proximal to an intake tract to obtain more accurate air intake information.

7. Claims 2, 3, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller (US Patent 5,237,617) in view of Tanaka et al. (US Patent 5,692,052).

Regarding Claim 2, Miller discloses a device as stated in Claim 1. Miller does not disclose a synthesizer as a function of engine speed. Tanaka et al. discloses synthesizer (Fig. 16, references 44 and 46) which provides at least one sinusoidal frequency (signals 54a and 54b) which is a function of an engine speed (sensor 55) of said motor vehicle (Tanaka et al. discloses signal 462a, 461a (Figure 17) within references 44 and 46 consist of sine waves (Column 10, lines 32-37). Since engine speed is major contributor to the noise produced by an engine, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a synthesizer that provides at least one sinusoidal frequency which is a function of engine speed in order to obtain a more accurate audio output.

Regarding Claim 3, Tanaka et al. further discloses memory map information (memory unit) (Fig. 19, reference 45) consisting of values for amplitudes and phases of sinusoidal oscillations as a function of the engine speed (Column 10, lines 38-52). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a memory unit to obtain a more accurate synthesized audio output.

Regarding Claim 7, Miller does not disclose a signal processing unit including a filter unit for filtering a signal from said sound pressure sensor. Tanaka discloses a signal processing unit (Fig 16, reference 54) including a filter unit (filter 41) for filtering a

signal from an air flow meter (meter 53) and wherein said filter provides an output which changes the sound characteristics of signal detected by a flow meter (Tanaka et al. teaches signal from air flow is inputted to bandpass filter 41 which changes signal by extracting alternating current components) (Column 9, lines 47-51). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a filter unit for filtering a signal from said sound pressure sensor to obtain a cleaner audio signal.

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miller (US Patent 5,237,617) in view of Sonnabend (US Patent 4,354,415).

Regarding Claim 8, Miller discloses an analyzer (synthesizer) as a function of operational parameters of a motor vehicle (Fig. 1) (Column 3, lines 56-62). Miller does not disclose a signal processing unit for mixing the sound from said sound pressure sensor and from said synthesizer. Sonnabend discloses a means for mixing (Fig 2, reference 70) the sound from a musical instrument (reference 51) and from a synthesized signal of the instrument (reference 68) (Column 1, lines 57 through Column 2, line1) in order to enhance the acoustic impression of random phase variations (Column 1, lines 40-41). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a means for mixing the sound from said pressure sensor and from said synthesizer as a function of said motor vehicle to enhance the acoustical output of the device.



**Conclusion**

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tamamura et al. (US Patent 5,485,523) Tamamura et al. Discloses an active noise reduction system for automobile compartment using engine signal means.

Prus (US Patent 6,275,590) Prus discloses an engine noise simulating novelty device using effects library ROM and synthesizer.

Plugge et al. (US Patent 6,356,185) Plugge discloses a classic automobile sound processor using engine vacuum pressure sensor.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Michalski whose telephone number is (703)305-5598. The examiner can normally be reached on 8 Hours, 5 day/week.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester Isen can be reached on (703)305-4386. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9314 for regular communications and (703)872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

Jm  
July 21, 2003

  
XU MEI  
PRIMARY EXAMINER